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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,005	02/14/2002	Paul F. Baude	57321US002	9204
32692	7590	01/05/2004		
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
			EXAMINER LUND, JEFFRIE ROBERT	
			ART UNIT 1763	PAPER NUMBER

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/076,005

Applicant(s)

BAUDE ET AL.

Examiner

Jeffrie R. Lund

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) 36-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 and 53-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3,4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-35 and 53-60, drawn to a deposition mask and deposition system, classified in class 118, subclass 720. (The examiner has combined Group I, claims 1-20, and Group II, claims 21-35 and 53-60, of the election of May 6, 2003, into the current Group I, claims 1-35 and 53-60.)
  - II. Claims 36-52, drawn to a method of coating, classified in class 427, subclass 96+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group II and Group I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the mask and system as claimed can be used to practice another and materially different process such as an etching method.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Lucy Weiss on May 6, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20, now

Art Unit: 1763

1-35 and 53-60. Affirmation of this election must be made by applicant in replying to this Office action. Claims 36-52 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Specification***

6. The disclosure is objected to because of the following informalities: on page 10 line 25 "67provides" should read --67 provides--; and on page 15 line 14 "ares" should read --areas--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 1763

8. Claims 1-3, 5-7, 13, 14, 19, 21-26, 28, 29, 34, 35, 53, 54, 56, and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by Izu et al, US Patent 4,369,730.

Izu et al teaches a web coating system for that includes: a first flexible web 10; a deposition mask 34; a second deposition mask 36 of about 10 meter in length (32 feet); a third deposition mask 38; a drive mechanism 40; an alignment means for aligning the first web and the mask by stretching the mask and/or the first flexible web in a downstream direction with a tensioning means 40, and in a cross-web direction with tensioning means 42; controllers for controlling the aligning means and the relative movement between the first flexible web and the mask; first deposition unit 28 that deposits on the first web through the first deposition mask 34; second deposition unit 30 that deposits on the first web 10 through the second deposition mask 36; and a third deposition unit 32 that deposits on the first web through the third deposition mask. The mask has a number of mask patterns (strips) 39, each having the same pattern. The mask is flexible enough to be wound as indicated by the mask being bent around the rollers 34', 36', 38'. (Figures 1a, and 1b; the entire specification, specifically, column 2 line 48 through column 4 line 40)

9. Claims 1-8 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurihara et al, JP Patent 5-228669.

Kurihara et al teaches a web manufacturing system that produces a deposition mask that is formed on a flexible elongated web 5 and includes: a number of mask patterns each having the same pattern (figure 6A-C, 19) or different patterns (figures 18A-D, 19); is made of polymeric material (paragraph 16) and therefore flexible enough

Art Unit: 1763

to be wound into rolls or stretched; has a width of at least 3 cm (25-50 cm) and a length of greater than 10 meters (because it is processed at a rate of 5 to 30 meters/minute).

10. Claims 1-7, 19, 21, and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Broody et al, in "Flexible Thin-Film Transistors Stretch Performance, Shrink Cost".

Broody et al teaches a web coating system that includes a first flexible web, a deposition mask, a drive mechanism (see hand crank), and a deposition unit. The mask has a number of mask patterns, each having the same pattern (i.e. red substrate having 100 transistors) or different patterns (i.e. a red substrate having 100 transistors and a green substrate having 658 transistors) on the same spool. The mask is flexible enough to be wound as indicated by the mask being bent around the rollers 34', 36', 38', and is flexible in a down-web direction and cross-web direction. (See figures on page 21)

11. Claims 1-4, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kinoshita, EP Patent 0 719 638 A2.

Kinoshita teaches a manufacturing system that produces a deposition mask 50 that is formed on a flexible elongated web and includes: a number of mask patterns each having the same pattern or different patterns (figure 15); is made of plastic (paragraph 16) and therefore flexible enough to be wound into rolls or stretched; and has a thickness less than 200  $\mu\text{m}$  or 30  $\mu\text{m}$  (10-500  $\mu\text{m}$ ) and a length of greater than 10 meters be caused it is processed at a rate of 5 to 30 meters/minute). (Entire document specifically, column 18 lines 57-59, and column 42 lines 19-28)

Art Unit: 1763

12. Claims 1-6, 21, 26, 28-30, 34 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by D'Amato, US Patent 6,440,277 B1.

D'Amato teaches a web coating system that includes: a first flexible web 101; a deposition mask 15; a drive mechanism; and a first deposition unit 17 that deposits on the first web through the first deposition mask. The mask has a number of mask patterns (strips) (figure 5D), each having the same pattern or a different pattern (holes) (figure 5B). The mask is flexible enough to be wound as indicated by the mask being bent around the rollers. (Entire document)

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 8, 9, 16, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izu et al, US Patent 4,369,730 in view of Schwiebert et al, US Patent 5,539,153.

Izu et al was discussed above.

Izu et al differs from the present invention in that Izu et al does not teach that the mask is made out of a polymeric film.

Schwiebert et al teaches a mask 326, 75-100 microns thick, made of polyimide (column 6 lines 25-31).

The motivation for making the mask of Izu et al out of polyimide, as taught by Schwiebert et al, is to provide a material of construction as required by Izu et al but not disclosed.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the mask of Izu et al out of polyimide as taught by Schwiebert et al.

15. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over, Izu et al, US Patent 4,369,730 in view of JP 54-65764.

Izu et al was discussed above.

Izu et al differs from the present invention in that Izu et al does not teach that the flexible film is impregnated with a magnetic material.

JP 54-65764 teaches a flexible film web with impregnated magnetic material (abstract).

The motivation for making the flexible film of Izu et al out of a flexible film having impregnated magnetic material as taught by JP 54-65764, is to provide a material of construction as required by Izu et al but not disclosed.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the flexible film of Izu et al out of the flexible film with impregnated with magnetic material as taught by JP 54-65764.

16. Claims 10-12, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izu et al, US Patent 4,369,730.

Izu et al was discussed above.



Art Unit: 1763

Izu et al differs from the present invention in that Izu et al does not teach a specific size of the aperture (i.e. approximately 1000  $\mu\text{m}$ , 50  $\mu\text{m}$  20  $\mu\text{m}$ ).

The specific size of the aperture is a design consideration and one of ordinary skill in the art would size the aperture to deposit the desired size element. The current state of the art is much smaller than the claimed limitations.

The motivation for optimizing the aperture by selecting a specific size of aperture is to enable the mask to deposit the desired size of element. Furthermore, it has been held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. (Also see MPEP 2144.04 (d))

Therefore it would have been obvious to optimize the size of the aperture in the mask of Izu et al.

17. Claims 20 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Izu et al, US Patent 4,369,730 in view of Brady, US Patent 6,259,408 B1.

Izu et al was discussed above.

Izu et al differs from the present invention in that Izu et al does not teach depositing an RFID circuit.

Brady et al teaches a method for forming an RFID circuit using a mask (figure 2, entire document)

Art Unit: 1763

The motivation for making an RFID circuit in the apparatus of Izu et al as taught by Brady et al is to enable the apparatus of Izu et al to produce RFID circuits.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the apparatus of Izu et al to produce an RFID circuit as taught by Brady et al.

18. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over, Izu et al, US Patent 4,369,730 in view of Miyake, US Patent 5,534,969.

Izu et al was discussed above.

Izu et al differs from the present invention in that Izu et al does not teach one or more sensors to sense whether the mask is aligned with the substrate.

Miyake teaches an alignment apparatus that includes sensors 9 that sense whether the mask is aligned with the substrate.

The motivation for adding a sensor to sense whether the mask is aligned with the substrate or not is to ensure that the substrate and mask are properly aligned.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the sensor of Miyake et al to apparatus of Izu et al.

19. Claims 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izu et al, US Patent 4,369,730 in view of Paul K. Weimer in "The TFT—A New Thin-Film Transistor".

Izu et al was discussed above.

Art Unit: 1763

Izu et al differs from the present invention in that Izu et al does not teach that the stretching mechanism of the first web is in a different direction of the stretching mechanism of the second web i.e. that the two webs are not parallel to each other.

Weimer teaches a coating apparatus that includes a substrate that moves in a direction perpendicular to the direction of the movement of the mask, i.e. both the down-web direction and cross-web direction are different (see page 1468).

The motivation for making the direction of stretching of the first web and mask in the apparatus of Izu et al as taught by Weimer is to provide an alternate and equivalent means of orienting the first web and the mask. Furthermore, it has been held in *In re Japikse* 86 USPQ 70 that the rearrangement of parts is obvious.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the apparatus of Izu et al to so that the down-web and cross-web direction of stretching is different as taught by Weimer.

### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention. The cited art contains patents that could be used to reject the claims under 35 USC § 102 or 103. These rejections have not been made because they do not provide any additional or different teachings, and if they were applied, would have resulted in an undue multiplication of references. (See MPEP 707.07(g))

Art Unit: 1763

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Jeffrie R. Lund  
Primary Examiner  
Art Unit 1763

JRL  
December